

ZFW
PATENT

Attorney Docket No.: INTEL1250-1 (P13830X)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Chan and Su
Application No.: 10/672,149
Filed: September 26, 2003
Title: METHODS AND DEVICE FOR DNA SEQUENCING USING SURFACE ENHANCED RAMAN SCATTERING (SERS)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL SHEET

Sir:

Transmitted herewith for the above-identified application please find:

1. Information Disclosure Statement (2 pages);
2. Form PTO-1449 from parent (S/N 10/108,128, filed March 26, 2002) (3 pages);
3. Form PTO 1449 (2 pages);
4. Fifteen references;
5. Return Receipt Postcard

CERTIFICATION UNDER 37 CFR §1.8

I hereby certify that the documents referred to as enclosed herein are being deposited with the United States Postal Service as first class mail on September 20, 2004, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

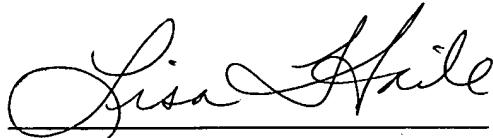
Karen LePari
Karen LePari

In re Application of:
Chan and Su
Application No.: 10/672,149
Filed: September 26, 2003
Page 2

PATENT
Attorney Docket No.: INTEL1250-1 (P13830X)

This Information Disclosure Statement is being filed prior to receipt of a First Office Action on the merits. Therefore, no fee is deemed necessary. However, the Commissioner is hereby authorized to charge any amounts required by this filing, or credit any overpayment, to Deposit Account No. 50-1355.

Respectfully submitted,



Date: September 20, 2004

Lisa A. Haile, J.D., Ph.D.
Registration No. 38,347
Telephone: (858) 677-1456
Facsimile: (858) 677-1465

GRAY CARY WARE & FREIDENRICH LLP
ATTORNEYS FOR INTEL CORPORATION
4365 Executive Drive, Suite 1100
San Diego, California 92121-2133
USPTO Customer Number 28213



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Chan and Su
Application No.: 10/672,149
Filed: September 26, 2003
Title: METHODS AND DEVICE FOR DNA SEQUENCING USING SURFACE ENHANCED RAMAN SCATTERING (SERS)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 § CFR 1.97, Applicants bring to the Examiner's attention the related parent patent application, U.S. Serial No. 10/108,128, filed March 26, 2002, which is relied upon for an earlier filing date under 35 USC § 120. For the convenience of the Examiner, copies of the PTO Forms 1449 are enclosed.

In accordance with 37 C.F.R. 1.97, enclosed are references relating to the above-identified application. For the convenience of the Examiner, these references are listed on the attached Form PTO-1449 and a copy of each is enclosed herewith.

It is respectfully requested that these references be considered in the examination of this application and their consideration be made of written record in the application file.

CERTIFICATION UNDER 37 CFR §1.8

I hereby certify that the documents referred to as enclosed herein are being deposited with the United States Postal Service as first class mail on September 20, 2004, in an envelope addressed to:
Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Karen LePari
Karen LePari

In re Application of:
Chan and Su
Application No.: 10/672,149
Filed: September 26, 2003
Page 2

PATENT
Attorney Docket No.: INTEL1250-1 (P13830X)

This Information Disclosure Statement is being filed prior to receipt of a First Office Action on the merits. Therefore, no fee is deemed necessary. However, the Commissioner is hereby authorized to charge any amounts required by this filing, or credit any overpayment, to Deposit Account No. 50-1355.

Respectfully submitted,


Lisa A. Haile, J.D., Ph.D.
Registration No. 38,347
Telephone: (858) 677-1456
Facsimile: (858) 677-1465

GRAY CARY WARE & FREIDENRICH LLP
ATTORNEYS FOR INTEL CORPORATION
4365 Executive Drive, Suite 1100
San Diego, California 92121-2133
USPTO Customer Number 28213

Please type a plus sign (+) in this box

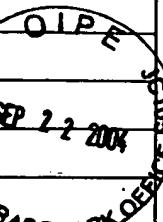
+

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

<p>Substitute for form 1449A/PTO (modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)</p>				Complete if known	
Sheet	1	of	2	Application Number	10/108,128
				Filing Date	March 26, 2002
			First Named Inventor	Selena Chan	
			Group Art Unit	1712	
			Examiner Name	Not yet assigned	
			Attorney Docket Number	042390.P13830	

**U.S. PATENT DOCUMENTS**

Examiner Initials	Cite No. ¹	U.S. Patent Document Number	Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Figures Appear
		4,962,037		Jett, et al.	10/09/1990	
		5,306,403		Vo-Dinh	04/26/1994	
		5,405,747		Jett, et al.	04/11/1995	
		5,721,102		Vo-Dinh	02/24/1998	
		5,776,674		Ulmer	07/07/1998	
		5,783,389		Vo-Dinh	07/21/1998	
		5,814,516		Vo-Dinh	09/29/1998	
		5,866,336		Nazarenko, et al.	02/02/1999	
		5,867,266		Craighead	02/02/1999	
		6,002,471		Quake	12/14/1999	
		6,040,191		Grow	03/21/2000	
		6,054,495		Markowitz	04/25/2000	
		6,127,120		Graham, et al.	10/03/2000	
		6,136,543		Anazawa, et al.	10/24/2000	
		6,140,053		Köster	10/31/2000	
		6,149,868		Natan, et al.	11/21/2000	
		6,174,677		Vo-Dinh	01/16/2001	
		6,180,415		Schultz, et al.	01/30/2001	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Office ³	Foreign Patent Number ⁴	Kind Code ⁵ (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ⁶
Examiner Signature							Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Please type a plus sign (+) in this box

+

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

<p>Substitute for form 1449A/PTO</p> <p>(modified)</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(use as many sheets as necessary)</p>				Complete if known	
Sheet	2	of	2	Application Number	10/108,128
				Filing Date	March 26, 2002
				First Named Inventor	Selena Chan
				Group Art Unit	1712
				Examiner Name	Not yet assigned
				Attorney Docket Number	042390.P13830

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No. ¹	U.S. Patent Document Number	Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Figures Appear
		6,210,896		Chan	04/03/2001	
		6,214,246		Craighead	04/10/2001	
		6,219,137		Vo-Dinh	04/17/2001	
		6,225,068		Wolfrum	05/01/2001	
		6,313,914		Roe	11/06/2001	
		6,344,272		Oldenburg, et al.	02/05/2002	
		6,376,177		Poponin	04/23/2002	

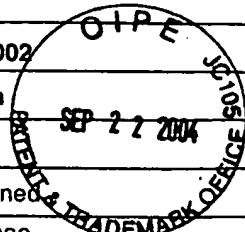
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.
		MACHARA, N. et al., Efficient Detection of Single Molecules Eluting Off an Optically Trapped Microsphere, <i>Bioimaging</i> 6 (1998), 33-42, 1998.
		1997 DOE Human Genome Program Contractor-Grantee Workshop VI, Pages 23-25, Retrieved from the Internet URL: < http://www.ornl.gov/hgmis/publicat/97santa/seqtech.html >
		M. SAUER, New Strategies for DNA Sequencing Using Diode Laser-Based Time-Resolved Fluorescence Detection [Retrieved on November 12, 2001]. Retrieved from the Internet URL: < http://pc-cube01 pci.uni-heidelberg.de/alt/msauer/emsproject01.htm >. 2 pages.
		Lee and Meisel, <i>J. Phys. Chem.</i> 86:3391-3395, 1982
		Goodwin et al., 1996, <i>Acc. Chem. Res.</i> 29:607-613
		Feldheim, "Assembly of metal nanoparticle arrays using molecular bridges," The Electrochemical Society Interface, Fall, 2001, pp. 22-25
		K. Dörre et al., "Techniques for Single Molecule Sequencing," <i>Bioimaging</i> 5 (1997) 139-152.
		B. Dubertret et al., "Single-Mismatch Detection Using Gold-Quenched Fluorescent Oligonucleotides," <i>Nature Biotechnology</i> , Volume 19, 2001, 365-370.
		High-Throughput Electron-Beam Lithography System, Nova Scientific , Inc, Pages 1-4, Retrieved from the Internet URL: http://www.mdatechnology.net/techsearch.asp?articleid=510
Examiner Signature		Date Considered

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO (modified) SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT (use as many sheets as necessary)				Complete if known	
Sheet 1	of 1			Application Number	10/108,128
				Filing Date	March 26, 2002
				First Named Inventor	Selena Chan
				Group Art Unit	1712
				Examiner Name	Not yet assigned
				Attorney Docket Number	042390.P13830

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

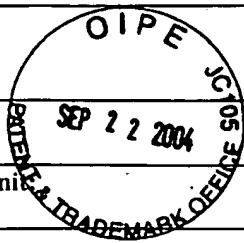
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Bloch <i>et al.</i> , "Optics with an atom laser beam," <i>Phys. Rev. Lett.</i> 87, 2001.	
		Ivanisevic <i>et al.</i> , "Dip-Pen' Nanolithography on Semiconductor Surfaces," <i>J. Am. Chem. Soc.</i> , 123: 7887-7889, 2001.	
		Siegel, "Ion Beam Lithography," VLSI Electronics, Microstructure Science, Vol. 16, Einspruch and Watts eds., Academic Press, New York, 1987.	
		Jin <i>et al.</i> , "Photoinduced Conversion of Silver Nanospheres to Nanoprisms," <i>Science</i> , 294: 1901-1903, 2001.	

Examiner Signature		Date Considered
--------------------	--	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ²Applicant is to place a check mark here if English language Translation is attached.

FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office		Docket No.: INTEL1250-1 (P13830X)	Serial No.: 10/672,149
Applicants: Chan and Su			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Filing Date: September 26, 2003	Group Art Unit 1632



U.S. PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE

FOREIGN PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

	AA	Anderson, J.R. et al., "Fabrication of Topologically Complex Three-Dimensional Microfluidic Systems in PDMS by Rapid Prototyping", <i>Anal. Chem.</i> Vol. 72, No. 14, pp. 3158-3164, 2000.
	AB	Bennink, M.L. et al., "Single-Molecule Manipulation of Double-Stranded DNA Using Optical Tweezers: Interaction studies of DNA with RecA and YOYO-1", <i>Cytometry</i> , Vol. 36, pp. 200-208, 1999.
	AC	Craighead, H.G., "Nanoelectromechanical Systems", <i>Science</i> , Vol. 290, pp. 1532-1535, 2000.
	AD	Dörre, K. et al, "Techniques for single molecule sequencing", <i>Bioimaging</i> , Vol. 5, pp. 139-152, 1997.
	AE	Effenhauser, C.S. et al., "High-Speed Separation of Antisense Oligonucleotides on a Micromachined Capillary Electrophoresis Device", <i>Anal. Chem.</i> , Vol. 66, No. 18, pp. 2949-2953, 1994.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office		Docket No.: INTEL1250-1 (P13830X)	Serial No.: 10/672,149
Applicants: Chan and Su			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Filing Date: September 26, 2003	Group Art Unit: 1632

	AF	Goodman, M.F. and Tippin, B., "The Expanding Polymerase Universe", <i>Molecular Cell Biology</i> , Vol. 1, No. 2, pp. 101-109, 2000.
	AG	Harrison, D.J. et al., "Micromachining a Miniaturized Capillary Electrophoresis-Based Chemical Analysis System on a Chip", <i>Science</i> , Vol. 261, pp. 895-897, 1993.
	AH	Holmstrøm, K. et al., "A Highly Sensitive and Fast Nonradioactive Method for Detection of Polymerase Chain Reaction Products", <i>Anal. Biochem.</i> , Vol. 209, pp. 278-283, 1993.
	AI	Mehta, A.D. et al., "Single-Molecule Biomechanics with Optical Methods", <i>Science</i> , Vol. 283, pp. 1689-1695, 1999.
	AJ	Newton, C.R. et al., "The production of PCR products with 5' single-stranded tails using primers that incorporate novel phosphoramidite intermediates", <i>Nucleic Acids Research</i> , Vol. 21, No. 5, pp. 1155-1162, 1993.
	AK	Rasmussen, S.R. et al., "Covalent Immobilization of DNA onto Polystyrene Microwells: The Molecules Are Only Bound at the 5' End", <i>Anal. Biochem.</i> , Vol. 198, pp. 138-132, 1991.
	AL	Running, J.A. and Urdea, M.S., "A Procedure for Productive Coupling of Synthetic Oligonucleotides to Polystyrene Microtiter Wells for Hybridization Capture", <i>BioTechniques</i> , Vol. 8, No. 3, pp. 276-277, 1990.
	AM	Smith, S.P. et al., "Inexpensive optical tweezers for undergraduate laboratories", <i>Am. J. Phys.</i> , Vol. 67, pp. 26-35, 1999.
	AN	Walker, L.M. et al., "Mechanical manipulation of bone and cartilage cells with 'optical tweezers'", <i>FEBS Lett.</i> , Vol 459, pp. 39-42, 2000.
	AO	Woolley, A.T. and Mathies, R.A., "Ultra-high-speed DNA fragment separations using microfabricated capillary array electrophoresis chips", <i>Proc. Natl. Acad. Sci.</i> , Vol. 91, pp. 11348-11352, 1994.

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.